

Claims

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- 3 1. Heat exchanger (10) between a cooling circuit and an exhaust-gas line of
4 an internal combustion engine that comprises a coolant inflow (26) and a coolant
5 return (28) for coolant ducts (14), as well as an exhaust-gas inlet (30) and an
6 exhaust-gas outlet (32) for exhaust-air ducts (36), characterized in that it is
7 arranged in a main exhaust-gas flow (34), and that a shutoff device (20) is
8 provided in the coolant inflow (20).
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- 10 2. Heat exchanger (10) according to Claim 1, characterized in that a gas
11 reservoir (16) is connected at a high point (24) of the coolant ducts (14), from
12 which, when the shutoff device (20) is closed and an upper limit temperature of
13 the coolant is reached, gas is directed from the gas reservoir (16) into the coolant
14 ducts (14) and displaces the coolant from the heat exchanger (10), and that the
15 gas is returned to the gas reservoir (16) shortly before the shutoff device (20) is
16 opened.
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- 18 3. Heat exchanger (10) according to Claim 2, characterized in that the gas
19 reservoir (16) is designed as a bellows, on one face (48) of which a connecting
20 line (18) is arranged and on the opposite face (50) of which an actuator (22) acts.
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- 22 4. Heat exchanger (10) according to Claim 3, characterized in that the
23 actuator (22) is operated electrically, hydraulically and/or pneumatically.
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- 25 5. Heat exchanger (10) according to one of the preceding claims,
26 characterized in that it is arranged in a main exhaust-gas flow (34) in the
27 direction of flow behind a catalytic exhaust-gas converter.
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- 29 6. Heat exchanger (10) according to one of the Claims 1 or 5, characterized
30 in that, between the exhaust-gas inlet (30) and the exhaust-gas outlet (32), a
31 bypass line (56) is provided, on the branch of which a shutoff device (58) is

- 1 arranged in order to control the exhaust- gas inlet (30) and the bypass line (56) in
- 2 complementary fashion.
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